

*Rule 126
Remembered
P/A*
IN THE CLAIMS*Claims
20-49*

Please amend the claims as follows:

1. (currently amended) A method of converting a stream of databits of a binary information signal into a stream of databits of a constrained binary channel signal, wherein the stream of databits of the binary information signal is divided into n-bit information words, said information words being converted into m1-bit channel words in accordance with a channel code C1, or m2-bit channel words, in accordance with a channel code C2, where m1, m2 and n are integers for which it holds that $m2 > m1 > n$, wherein the m2-bit channel word is chosen from at least two m2-bit channel words, at least two of which have opposite parities, a concatenation of the concatenated m1-bit channel words and the m2-bit channel words complying with a runlength constraint of the binary channel signal,

characterized in that the method comprises the repetitive and/or alternate steps of:

- selecting the m1-bit channel word from a set out of a plurality of sets of m1-bit channel words, each set comprising only m1-bit channel words having a beginning part out of a subset of beginning parts of the m1-bit channel words, each set being associated with a coding state of channel code C1, the coding state being established in dependence upon an end part of the preceding channel word,

or:

- selecting the m2-bit channel word from a set out of a plurality of sets of m2-bit channel words, each set comprising only m2-bit channel words having a beginning part out of a subset of beginning parts of the m2-bit channel words belonging to said set, each set being associated with a coding state of channel code C2, the coding state being established in dependence upon an end part of the preceding channel word,

the end parts of the m1-bit channel words in a coding state of channel code C1 and the beginning parts of the m2-bit channel words in a set of channel code C2 being arranged to comply with said runlength constraint.

2. (currently amended) A The method according to claim 1, characterized in that the number of coding states of channel code C1 is equal to the number of coding states of channel code C2.

3. (currently amended) A The method according to claim 1-~~or 2~~, characterized in that the end part of any m1-bit channel word has a multiplicity y1, the multiplicity y1 being the number of different states of the channel code C1 said end part may establish, and that the end part of any m2-bit channel word has a multiplicity y2, the multiplicity y2 being the number of states of the channel code C2 said end part may establish and in that $y1 = y2$ if the end part of the m1-bit channel word is equal to the end part of the m2-bit channel word.

4. (currently amended) A The method according to claim 1, ~~2 or 3~~, characterized in that said at least two m2-bit channel words establish the same state.

5. (currently amended) A The method according to claim 1, characterized in that the sets of channel words of channel code C1 and the sets of channel words of channel code C2 are arranged that binary channel signal formed by the concatenated m1-bit channel words and the m2-bit channel words comply with a d=2 constraint and a k=10 constraint.

6. (currently amended) A The method according to claim 1-~~or 5~~, characterized in that the sets of channel words of channel code C1

and the coding states of channel code C2 are arranged that binary channel signal formed by the concatenated m1-bit channel words and the m2-bit channel words comply with a Repeated-Minimum-Runlength-Limitation = 6 constraint on the binary channel.

7. (currently amended) A The method according to claim 1, characterized in that $n = 8$, $m1 = 15$, $m2 = 17$.

8. (currently amended) A The method according to claim 1, ~~2, 3 or 4,~~ characterized in that the ratio between the number of m1-bit channel words and the number of m2-bit channel words is determined in dependence of a chosen measure of DC-control.

9. (currently amended) A The method according to claim 1, characterized in that the coding state is further being established in dependence upon the n-bit information word, thereby allowing to distinguish this n-bit information word by detecting the coding state.

10. (currently amended) A The method as claimed in claim 1, ~~2, 3 or 4,~~ characterized in that the coding states of channel code C1 and the coding states of channel code C2 are further arranged that a limited number of channel words is substituted for other channel words or patterns, these other channel words or patterns not belonging to the sets of channel words of channel code C1 and channel code C2.

11. (currently amended) A device for encoding a stream of databits of a binary information signal into a stream of databits of a constrained binary channel signal, for performing ~~one of the methods as claimed~~ the method of claim 1, the device comprising an n-to-m1-bit converter for converting the n-bit information words

into m1-bit channel words, an n-to-m2-bit converter for converting the n-bit information words into m2-bit channel words, state-establishing means for establishing a coding state of the m1-bit channel words and of the m2-bit channel words, which n-to-m1 bit converter is further arranged for selecting the m1-bit channel word depending on the end part of the preceding channel word, which n-to-m2 bit converter is further arranged for selecting the m2-bit channel word depending on the end part of the preceding channel word.

12. (currently amended) A The device for encoding according to claim 11, characterized in that the device further comprises writing means for writing an information pattern on a record carrier.

13. (currently amended) A signal comprising a stream of databits of a constrained binary channel signal, obtained after ~~carrying out one of the methods as claimed by the method of claim 1.~~

14. (currently amended) A record carrier on which the signal ~~as claimed of claim 13~~ is recorded in a track, in which information patterns represent the signal portions, which information patterns comprise first and second parts, alternating in the direction of the track, the first parts presenting detectable properties and the second parts presenting detectable properties which are distinguishable from the first properties, the parts having the first properties representing bit cells having the first logic value and the parts having the second properties representing the bit cells having the second logic value.

15. (currently amended) A device for decoding a stream of databits of a constrained binary channel signal into a stream of databits of

a binary information signal, the device comprising converting means for converting the signal as-claimed of claim 13 into a bit string of bits having a first or a second value, the signal containing the m1-bit channel words and the m2-bit channel words, the bit string comprising the n-bit information words, the converting means being arranged to convert the m1-bit channel words and m2-bit channel words into n-bit information words, wherein one information word is assigned to one channel word to be converted.

16. (currently amended) A The device for decoding according to claim 15, characterized in that the device further comprises reading means for reading out an information pattern from a record carrier.

17. (new) The method according to claim 2 characterized in that said at least two m2-bit channel words establish the same state.

18. (new) The method according to claim 3 characterized in that said at least two m2-bit channel words establish the same state.

19. (new) The method according to claim 5, characterized in that the sets of channel words of channel code C1 and the coding states of channel code C2 are arranged that binary channel signal formed by the concatenated m1-bit channel words and the m2-bit channel words comply with a Repeated-Minimum-Runlength-Limitation = 6 constraint on the binary channel.

20. (new) The method according to claim 2, characterized in that the ratio between the number of m1-bit channel words and the number of m2-bit channel words is determined in dependence of a chosen measure of DC-control.

- 21/ 20. (new) The method according to claim 3, characterized in that the ratio between the number of m1-bit channel words and the number of m2-bit channel words is determined in dependence of a chosen measure of DC-control.
- 22/ 21. (new) The method according to claim 4, characterized in that the ratio between the number of m1-bit channel words and the number of m2-bit channel words is determined in dependence of a chosen measure of DC-control.
- 23/ 22. (new) A method as claimed in claim 3, characterized in that the coding states of channel code C1 and the coding states of channel code C2 are further arranged that a limited number of channel words is substituted for other channel words or patterns, these other channel words or patterns not belonging to the sets of channel words of channel code C1 and channel code C2.
- 24/ 23. (new) A method as claimed in claim 3, characterized in that the coding states of channel code C1 and the coding states of channel code C2 are further arranged that a limited number of channel words is substituted for other channel words or patterns, these other channel words or patterns not belonging to the sets of channel words of channel code C1 and channel code C2.
- 25/ 24. A method as claimed in claim 4, characterized in that the coding states of channel code C1 and the coding states of channel code C2 are further arranged that a limited number of channel words is substituted for other channel words or patterns, these other channel words or patterns not belonging to the sets of channel words of channel code C1 and channel code C2.
- 26/ 25. The method of claim 1, wherein:

the number of coding states of channel code C1 is equal to the number of coding states of channel code C2;

the end part of any m1-bit channel word has a multiplicity y1, the multiplicity y1 being the number of different states of the channel code C1 said end part may establish, and that the end part of any m2-bit channel word has a multiplicity y2, the multiplicity y2 being the number of states of the channel code C2 said end part may establish and in that $y1 = y2$ if the end part of the m1-bit channel word is equal to the end part of the m2-bit channel word;

the at least two m2-bit channel words establish the same state;

the binary channel signal complies with a d=2 constraint and a k=10 constraint;

the binary channel signal formed by the concatenated m1-bit channel words and the m2-bit channel words comply with a Repeated-Minimum-Runlength-Limitation = 6 constraint on the binary channel;

$n = 8$, $m1 = 15$, $m2 = 17$;

the ratio between the number of m1-bit channel words and the number of m2-bit channel words depends on a chosen level of DC-control;

the coding state established also depends on the n-bit information word, thereby allowing to distinguish this n-bit information word by detecting the coding state; and

a limited number of channel words is substituted for other channel words or patterns, these other channel words or patterns not belonging to the sets of channel words of channel code C1 and channel code C2.

26. The device of claim 11, wherein:

the number of coding states of channel code C1 is equal to the number of coding states of channel code C2;

the end part of any m1-bit channel word has a multiplicity y1, the multiplicity y1 being the number of different states of the channel code C1 said end part may establish, and that the end part of any m2-bit channel word has a multiplicity y2, the multiplicity y2 being the number of states of the channel code C2 said end part may establish and in that $y1 = y2$ if the end part of the m1-bit channel word is equal to the end part of the m2-bit channel word;

the at least two m2-bit channel words establish the same state;

the binary channel signal complies with a d=2 constraint and a k=10 constraint;

the binary channel signal formed by the concatenated m1-bit channel words and the m2-bit channel words comply with a Repeated-Minimum-Runlength-Limitation = 6 constraint on the binary channel;

$n = 8$, $m1 = 15$, $m2 = 17$;

the ratio between the number of m1-bit channel words and the number of m2-bit channel words depends on a chosen level of DC-control;

the coding state established also depends on the n-bit information word, thereby allowing to distinguish this n-bit information word by detecting the coding state;

a limited number of channel words is substituted for other channel words or patterns, these other channel words or patterns not belonging to the sets of channel words of channel code C1 and channel code C2.

27. The signal of claim 13, wherein:

the number of coding states of channel code C1 is equal to the number of coding states of channel code C2;

the end part of any m1-bit channel word has a multiplicity y1, the multiplicity y1 being the number of different states of the channel code C1 said end part may establish, and that the end part

of any m2-bit channel word has a multiplicity y2, the multiplicity y2 being the number of states of the channel code C2 said end part may establish and in that $y1 = y2$ if the end part of the m1-bit channel word is equal to the end part of the m2-bit channel word; the at least two m2-bit channel words establish the same state;

the binary channel signal complies with a d=2 constraint and a k=10 constraint;

the binary channel signal formed by the concatenated m1-bit channel words and the m2-bit channel words comply with a Repeated-Minimum-Runlength-Limitation = 6 constraint on the binary channel;

$n = 8$, $m1 = 15$, $m2 = 17$;

the ratio between the number of m1-bit channel words and the number of m2-bit channel words depends on a chosen level of DC-control;

the coding state established also depends on the n-bit information word, thereby allowing to distinguish this n-bit information word by detecting the coding state;

a limited number of channel words is substituted for other channel words or patterns, these other channel words or patterns not belonging to the sets of channel words of channel code C1 and channel code C2.

28. The record carrier of claim 14, wherein:

the number of coding states of channel code C1 is equal to the number of coding states of channel code C2;

the end part of any m1-bit channel word has a multiplicity y1, the multiplicity y1 being the number of different states of the channel code C1 said end part may establish, and that the end part of any m2-bit channel word has a multiplicity y2, the multiplicity y2 being the number of states of the channel code C2 said end part

may establish and in that $y_1 = y_2$ if the end part of the m1-bit channel word is equal to the end part of the m2-bit channel word; the at least two m2-bit channel words establish the same state;

the binary channel signal complies with a $d=2$ constraint and a $k=10$ constraint;

the binary channel signal formed by the concatenated m1-bit channel words and the m2-bit channel words comply with a Repeated-Minimum-Runlength-Limitation = 6 constraint on the binary channel;

$n = 8$, $m_1 = 15$, $m_2 = 17$;

the ratio between the number of m1-bit channel words and the number of m2-bit channel words depends on a chosen level of DC-control;

the coding state established also depends on the n-bit information word, thereby allowing to distinguish this n-bit information word by detecting the coding state;

a limited number of channel words is substituted for other channel words or patterns, these other channel words or patterns not belonging to the sets of channel words of channel code C1 and channel code C2.

4P / 29. The decoding device of claim 15, wherein:

the number of coding states of channel code C1 is equal to the number of coding states of channel code C2;

the end part of any m1-bit channel word has a multiplicity y_1 , the multiplicity y_1 being the number of different states of the channel code C1 said end part may establish, and that the end part of any m2-bit channel word has a multiplicity y_2 , the multiplicity y_2 being the number of states of the channel code C2 said end part may establish and in that $y_1 = y_2$ if the end part of the m1-bit channel word is equal to the end part of the m2-bit channel word;

the at least two m2-bit channel words establish the same state;

the binary channel signal complies with a $d=2$ constraint and a $k=10$ constraint;

the binary channel signal formed by the concatenated m1-bit channel words and the m2-bit channel words comply with a Repeated-Minimum-Runlength-Limitation = 6 constraint on the binary channel;

$n = 8$, $m1 = 15$, $m2 = 17$;

the ratio between the number of m1-bit channel words and the number of m2-bit channel words depends on a chosen level of DC-control;

the coding state established also depends on the n-bit information word, thereby allowing to distinguish this n-bit information word by detecting the coding state;

a limited number of channel words is substituted for other channel words or patterns, these other channel words or patterns not belonging to the sets of channel words of channel code C1 and channel code C2.

30. (new) A method comprising:

receiving an information signal representing information words having n-bit values;

converting the information words into code words, some of the code words having m1-bit values and other of the code words having m2-bit values, m1, m2 and n are integers and $m2 > m1 > n$; and

transmitting a code signal representing a sequence of code words, subsequent code words of the sequence immediately following preceding code words;

wherein:

the converting of information words into the corresponding m1-bit code words is in accordance with a conversion code C1;

the converting of information words into corresponding m2-bit code words is in accordance with a conversion code C2;

the sequence of code words complies with a runlength constraint and with a second constraint that is at least partially independent of the runlength constraint;

the converting includes selecting between conversion code C1 and conversion code C2 depending on a measure of the second constraint at times during the conversion;

at least for subsequent code words, for multiple information word values, the conversion using the C1 conversion code includes selecting between multiple predetermined alternative code word values for the same information word value, the alternative code word values have mutually different beginning parts, and the selection depends on an end part of the immediately preceding code word so that the sequence of code words complies with the runlength constraint;

the conversion of each information word using the C2 conversion code includes selecting between multiple predetermined alternative code word values for each information word value, the second alternative code word values include values having potentially mutually different effects on complying with the second constraint, and the selection depends on the effect of the selection on meeting the second constraint so that the sequence of code words complies with the second constraint.

31. (new) The method of claim 30, wherein:

the transmitting includes producing a record carrier containing the sequence of code words.

32. (new) An encoding device comprising:

an input that receives an information signal representing information words having n-bit values;

means for converting the information words into code words, some of the code words having m_1 -bit values and other of the code words having m_2 -bit values, m_1 , m_2 and n are integers and $m_2 > m_1 > n$; and

an output that transmits a code signal representing a sequence of code words, subsequent code words of the sequence immediately following preceding code words;

wherein:

the converting of information words into the corresponding m_1 -bit code words is in accordance with a conversion code C1;

the converting of information words into corresponding m_2 -bit code words is in accordance with a conversion code C2;

the sequence of code words complies with a runlength constraint and with a second constraint that is at least partially independent of the runlength constraint;

the converting includes selecting between conversion code C1 and conversion code C2 depending on a measure of the second constraint at times during the conversion;

for code words that immediately follow a previous code word in the sequence of code words, for multiple information word values, the conversion using the C1 conversion code includes selecting between multiple predetermined alternative code word values for the same information word value, the alternative code word values have mutually different beginning parts, and the selection depends on an end part of the immediately preceding code word so that the sequence of code words complies with the runlength constraint;

the conversion of each information word using the C2 conversion code includes selecting between multiple predetermined alternative code word values for each information word value, the second alternative code word values include values having potentially mutually different effects on complying with the second constraint, and the selection depends on the effect of the

selection on meeting the second constraint so that the sequence of code words complies with the second constraint.

33. (new) The encoding device of claim 32 further comprising a media recorder that records the code word signal on an information carrier.

34. (new) A code word signal produced by the method of claim 1.

35. (new) An information carrier comprising the code word signal of claim 34.

36. (new) A decoding device comprising:

an input that receives a code word signal that represents a sequence of code words, subsequent code words of the sequence immediately following preceding code words, some code words having m1-bit values and other code words having m2-bit values;

means for determining whether a code word is an m1-bit code word or an m2-bit code word;

means for converting the m1-bit and m2-bit code words into corresponding information words having n-bit values, the converting depending on the determination, wherein m1, m2 and n are integers, and $m2 > m1 > n$; and

an output that transmits the sequence of information words; wherein:

the converting of information words into the corresponding m1-bit code words is in accordance with a conversion code C1;

the converting of information words into corresponding m2-bit code words is in accordance with a conversion code C2;

the sequence of code words complies with a runlength constraint and with a second constraint that is at least partially independent of the runlength constraint;

the converting includes selecting between conversion code C1 and conversion code C2 depending on a measure of the second constraint at times during the conversion;

for subsequent code words, for multiple information word values, the conversion using the C1 conversion code includes selecting between multiple predetermined alternative code word values for the same information word value, the alternative code word values have mutually different beginning parts, and the selection depends on an end part of the immediately preceding code word so that the sequence of code words complies with the runlength constraint;

the conversion of each information word using the C2 conversion code includes selecting between multiple predetermined alternative code word values for each information word value, the second alternative code word values include values having potentially mutually different effects on complying with the second constraint, and the selection depends on the effect of the selection on meeting the second constraint so that the sequence of code words complies with the second constraint.

38 37. (new) The decoding device of claim 36 further comprising a media player for reading the sequence of code words from an information carrier.

39 38. (new) The method of claim 30, wherein:

the second constraint on the sequence of code words is related to DC-control in the sequence of code words;

for multiple information word values, in the conversion using the C2 conversion code, the alternative code word values include values having different beginning parts, and for code words that immediately follow a previous code word in the sequence of code words the selection of the C2 conversion code further depends on an

end part of the immediately preceding code word so that the sequence of code words complies with the runlength constraint;

for each information word value there are y_1 alternative code word values in conversion code C1, the y_1 alternative code word values corresponding to respective y_1 different criteria for the end part of an immediately preceding code word for complying with the runlength constraint for the code word sequence, and $y_1 > 1$;

for each information word value there are y_2 groups of multiple alternative code word values in conversion code C2, the y_2 groups corresponding to respective y_2 different criteria for the end part of an immediately preceding code word for complying with the runlength constraint for the code word sequence, $y_2 > 1$, each of the y_2 groups including multiple alternative code word values having different effects on meeting the second constraint for selecting between the alternative code word values for complying with the second constraint;

$y_1 = y_2$;

the y_1 different end part criteria for conversion code C1 are the same as corresponding y_2 different end part criteria for the conversion code C2;

the runlength constraint of the sequence of code words includes a minimum runlength of d and a maximum runlength of k ;

$d=2$ and $k=10$;

the runlength constraint further includes a Repeated-Minimum-Runlength-Limitation = 6;

$n = 8$, $m_1 = 15$, $m_2 = 17$;

the ratio between the number of m_1 -bit code words and the number of m_2 -bit code words depends on a chosen level of DC-control;

the converting including establishing a coding state depending on the value of the immediately preceding code word in the sequence of code words, each of the C1 and C2 conversion codes including a

set of code words corresponding to each respective state, each set of code words having one or more predetermined code words for each respective possible information word, the code word being selected from among the one or more predetermined code words for the information word in the set of code words for the established state and of the selected conversion code;

The state also depending on the information word value, thereby allowing the n-bit information word to be determined depending on the coding state; and

a limited number of code words are substituted for other code words or patterns, these other code words or patterns not belonging to the code words of conversion code C1 and conversion code C2.

39. (new) The encoding device of claim 32, wherein:

the second constraint on the sequence of code words is related to DC-control in the sequence of code words;

for multiple information word values, in the conversion using the C2 conversion code, the alternative code word values include values having different beginning parts, and for code words that immediately follow a previous code word in the sequence of code words the selection of the C2 conversion code further depends on an end part of the immediately preceding code word so that the sequence of code words complies with the runlength constraint;

for each information word value there are y1 alternative code word values in conversion code C1, the y1 alternative code word values corresponding to respective y1 different criteria for the end part of an immediately preceding code word for complying with the runlength constraint for the code word sequence, and $y1 > 1$;

for each information word value there are y2 groups of multiple alternative code word values in conversion code C2, the y2 groups corresponding to respective y2 different criteria for the end part of an immediately preceding code word for complying with

the runlength constraint for the code word sequence, $y_2 > 1$, each of the y_2 groups including multiple alternative code word values having different effects on meeting the second constraint for selecting between the alternative code word values for complying with the second constraint;

$y_1 = y_2$;

the y_1 different end part criteria for conversion code C1 are the same as corresponding y_2 different end part criteria for the conversion code C2;

the runlength constraint of the sequence of code words includes a minimum runlength of d and a maximum runlength of k ;

$d=2$ and $k=10$;

the runlength constraint further includes a Repeated-Minimum-Runlength-Limitation = 6;

$n = 8$, $m_1 = 15$, $m_2 = 17$;

the ratio between the number of m_1 -bit code words and the number of m_2 -bit code words depends on a chosen level of DC-control;

the converting including establishing a coding state depending on the value of the immediately preceding code word in the sequence of code words, each of the C1 and C2 conversion codes including a set of code words corresponding to each respective state, each set of code words having one or more predetermined code words for each respective possible information word, the code word being selected from among the one or more predetermined code words for the information word in the set of code words for the established state and of the selected conversion code;

The state also depending on the information word value, thereby allowing the n -bit information word to be determined depending on the coding state; and

a limited number of code words are substituted for other code words or patterns, these other code words or patterns not belonging to the code words of conversion code C1 and conversion code C2.

40. (new) The decoding device of claim 38, wherein:

the second constraint on the sequence of code words is related to DC-control in the sequence of code words;

for multiple information word values, in the conversion using the C2 conversion code, the alternative code word values include values having different beginning parts, and for code words that immediately follow a previous code word in the sequence of code words the selection of the C2 conversion code further depends on an end part of the immediately preceding code word so that the sequence of code words complies with the runlength constraint;

for each information word value there are y_1 alternative code word values in conversion code C1, the y_1 alternative code word values corresponding to respective y_1 different criteria for the end part of an immediately preceding code word for complying with the runlength constraint for the code word sequence, and $y_1 > 1$;

for each information word value there are y_2 groups of multiple alternative code word values in conversion code C2, the y_2 groups corresponding to respective y_2 different criteria for the end part of an immediately preceding code word for complying with the runlength constraint for the code word sequence, $y_2 > 1$, each of the y_2 groups including multiple alternative code word values having different effects on meeting the second constraint for selecting between the alternative code word values for complying with the second constraint;

$y_1 = y_2$;

the y_1 different end part criteria for conversion code C1 are the same as corresponding y_2 different end part criteria for the conversion code C2;

the runlength constraint of the sequence of code words includes a minimum runlength of d and a maximum runlength of k ;

$d=2$ and $k=10$;

the runlength constraint further includes a Repeated-Minimum-Runlength-Limitation = 6;

$n = 8$, $m1 = 15$, $m2 = 17$;

the ratio between the number of $m1$ -bit code words and the number of $m2$ -bit code words depends on a chosen level of DC-control;

the converting including establishing a coding state depending on the value of the immediately preceding code word in the sequence of code words, each of the C1 and C2 conversion codes including a set of code words corresponding to each respective state, each set of code words having one or more predetermined code words for each respective possible information word, the code word being selected from among the one or more predetermined code words for the information word in the set of code words for the established state and of the selected conversion code;

The state also depending on the information word value, thereby allowing the n -bit information word to be determined depending on the coding state; and

a limited number of code words are substituted for other code words or patterns, these other code words or patterns not belonging to the code words of conversion code C1 and conversion code C2.

42 / 41. (new) A method comprising:

receiving an information signal representing information words having n -bit values;

selecting at times whether to convert the information words into code words having $m1$ -bit values or other code words with $m2$ -bit values;

converting some information words into code words having m_1 -bit values and other information words into code words having m_2 -bit values depending on the selecting, wherein m_1 , m_2 and n are integers, and $m_2 > m_1 > n$;

forming a code signal representing the code words, the code signal complying with a first constraint that is at least partially independent of whether preceding code words are m_1 -bit or m_2 -bit code words, the selecting between m_1 -bit code words and m_2 -bit code words depending on a measure related to the constraint; and transmitting the code signal.

43. (new) The method of claim 41 wherein the transmitting includes recording the code signal on a record carrier.

44. (new) The method of claim 41 wherein the measure is at least partially independent of a constraint on the run lengths in the code signal.

45. (new) An encoding device comprising:

an input that receives an information signal representing information words having n -bit values;

means for selecting at times whether to convert the information words into code words having m_1 -bit values or other code words with m_2 -bit values;

means for converting some information words into code words having m_1 -bit values and other information words into code words having m_2 -bit values depending on the selecting, wherein m_1 , m_2 and n are integers, and $m_2 > m_1 > n$;

means for forming a code signal representing the code words, the code signal complying with a first constraint that is at least partially independent of whether the preceding code words are m_1 -bit or m_2 -bit code words, the selecting between m_1 -bit code words

and m2-bit code words depending on a measure related to the constraint; and

an output that transmits the code signal.

45. (new) A signal produced by the method of claim 41.

46. (new) A record carrier produced by the method of claim 42.

47. (new) A decoding device comprising:

an input that receives a code signal representing code words, some code words having m1-bits and other code words having m2-bits; means for determining whether a code word is an m1-bit code word or an m2-bit code word, the determination being at least partially independent of whether preceding code words are m1-bit code words or m2-bit code words;

means for converting the m1-bit and m2-bit code words into corresponding n-bit information words depending on the determination, m1, m2 and n being integers and $m2 > m1 > n$; and an output that transmits a signal representing the information words.

48. (new) The method of claim 41 wherein:

the converting includes selecting between code word values so that the code signal complies with a runlength constraint on the code signal, the runlength constraint being different than the first constraint;

the code signal representing a sequence of code words in which subsequent code words immediately follow preceding code words;

at least for subsequent code words in the series, for multiple information word values, the conversion into m1-bit code words includes selecting between multiple predetermined alternative code word values for the same information word value, the alternative

code word values have mutually different beginning parts, and the selection depends on an end part of the immediately preceding code word so that the sequence of code words complies with the runlength constraint;

the conversion of information words into m2-bit code words includes selecting between multiple predetermined alternative code word values for each information word value, the alternative code word values include values having potentially mutually different effects on complying with the first constraint, and the selection depends on the effect of the selection on meeting the first constraint so that the sequence of code words complies with the first constraint;

the first constraint on the sequence of code words is related to DC-control in the sequence of code words;

for multiple information word values, in the conversion of information words into m2-bit code words, the alternative code word values include values having different beginning parts, and for code words that immediately follow a previous code word in the sequence of code words the selection of the m2-bit code word further depends on an end part of the immediately preceding code word so that the sequence of code words complies with the runlength constraint;

for each information word value there are y1 alternative m1-bit code word values, the y1 alternative code word values corresponding to respective y1 different criteria for the end part of an immediately preceding code word for complying with the runlength constraint for the code word sequence, and $y1 > 1$;

for each information word value there are y2 groups of multiple alternative m2-bit code word values, the y2 groups corresponding to respective y2 different criteria for the end part of an immediately preceding code word for complying with the runlength criteria for the code word sequence, $y2 > 1$, each of the

y2 groups including multiple alternative m2-bit code word values having different effects on meeting the first criteria for selecting between the alternative code word values for complying with the first;

y1 = y2;

the y1 different end part criteria for converting into m1-bit code words are the same as corresponding y2 different end part criteria for converting into m2-bit code words;

the runlength constraint of the sequence of code words includes a minimum runlength of d and a maximum runlength of k;

d=2 and k=10;

the runlength constraint further includes a Repeated-Minimum-Runlength-Limitation = 6;

n = 8, m1 = 15, m2 = 17;

the ratio between the number of m1-bit code words and the number of m2-bit code words in the code signal depends on a chosen level of DC-control;

the converting including establishing a coding state depending on the value of the immediately preceding code word in the sequence of code words, for both the converting into m1-bit and m2-bit code words, the code words are logically divisible into a different set of code words corresponding to each respective state, each set of code words having one or more predetermined code words for each respective possible information word; the code word being selected from among the one or more predetermined code words for the information word in the set of code words for the established state and of the selected conversion code;

The state also depending on the information word value, thereby allowing the n-bit information word to be determined depending on the coding state; and

a limited number of code words are substituted for other code words or patterns, these other code words or patterns not belonging